Amendments to the Claims:

This listing of the claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A method for forming a diamond coating on a substrate in a sealed chamber, comprising the steps of:

combining a graphite rod and a catalytic metal wire to form a graphite assembly, wherein the catalytic metal wire is wrapped around the graphite rod without touching the graphite rod ~~as a means~~ for forming precursors for diamond deposition upon receiving heat radiated from the graphite rod and placing the substrate and the combined graphite rod and catalytic metal wire into a chamber;

filling the chamber with hydrogen;

reducing ambient pressure in the chamber below 1 atmosphere;

sealing the chamber such that the ambient pressure in the chamber remains below 1 atmosphere and the hydrogen is contained within the sealed chamber and there is no flow of gas in or out during diamond deposition; and

passing electric current through the graphite rod until the substrate is heated within a range of 125°C-750°C.

2. (Previously Presented) The method claimed in claim 1, wherein the diamond coating manufactured is single crystalline diamond or polycrystalline diamond.

3. (Previously Presented) The method claimed in claim 1, wherein placement of the substrate relative to the graphite rod is determinative to the substrate having a desired temperature.

4. (Original) The method claimed in claim 2, wherein the substrate is perpendicular to the graphite rod.

5. (Original) The method claimed in claim 2, wherein the substrate is parallel to the graphite rod.

6. (Original) The method claimed in claim 2, further comprising the step of varying distance between the substrate and the graphite rod to vary the temperature of the substrate.

7. (Original) The method claimed in claim 1, wherein the diamond coating is formed on the substrate at 125°C-150°C.

8. (Original) The method claimed in claim 6, wherein the diamond coating is formed on the substrate at 125°C-150°C within 30-60 minutes.

Claims 9-24 are canceled.

25. (Previously Presented) The method claimed in claim 1, wherein the substrate is selected from the group consisting of semiconductors, polymers, metals, glass and quartz.